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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,867	12/11/2001	John Addink	302.05-US1	6583

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ROBERT D. FISH; RUTAN & TUCKER, LLP
P.O. BOX 1950
611 ANTON BLVD., 14TH FLOOR
COSTA MESA, CA 92628-1950

EXAMINER
ORTIZ RODRIGUEZ, CARLOS R

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 05/21/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/009,867	ADDINK ET AL.	
	Examiner	Art Unit	
	Carlos Ortiz-Rodriguez	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7,9-10,12 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgenstern et al. U.S Patent No. 5,839,660 in view of McCabe et al. U.S. Patent No. 6,453,216.

Regarding claim 1, Morgenstern et al. discloses an irrigation controller (see col 1 line 5) comprising: a memory that stores a model(see col 2 lines 60-64 and col 5 lines 35-37 also see col 3 lines 36-38); a microprocessor(see col 1 line 65) that applies a current value(real time) (see col 2 line 48-49 and col 2 last 8 lines and col 3 first 6 lines) for an environmental factor (see col 2 lines 49-50) to the model(see col 2 line 13) to estimate a current evapotranspiration rate (estimated ETo)(see col 2 lines 47-53 and the table on page the same page); and a mechanism that uses the estimated ETo to affect an irrigation schedule executed by the controller(see col 3 lines 27-34).

Morgenstern et al. fails to specifically disclose that the mathematical model utilized is a regression model. Although it is known in the art that when designing these types of system it's

the designers choice on which mathematical model is going to be utilized. A regression model is a description of a functional relationship between two or more correlated variables that may be empirically determined from data and is used especially to predict values of one variable when given the values of the others; the data disclosed by Morgenstern et al. suggest the use of a regression model.

Regarding the memory Morgenstern et al. does not clearly use the term memory. Although, Morgenstern et al. discloses a central processor unit, preloading data and programming a system thus suggest having a memory.

However McCabe et al. discloses a regression model utilized in the art of estimating evapotranspiration and irrigation systems (see col 9 last 3 lines and 10 first 5 lines).

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Morgenstern et al. and combining it with the invention disclosed by McCabe et al. The results of this combination would lead to an irrigation controller using regression model.

One of ordinary skill in the art would have been motivated to do this combination in order to obtain an irrigation system that would optimize the control of water distribution to multiple zones.

Regarding claim 2, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses the controller wherein the repression model is based upon a set of historical ETo values and a set of corresponding historical values for the environmental factor (see col 2 lines 7-10 and line 13).

Regarding claim 3, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 2. Morgenstern et al. further the controller wherein the set of historical ETo values spans a time period of at least two days (see col 1 lines 62-64 and col 2 lines 7-10).

Regarding claim 4, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 2. Morgenstern et al. further discloses the controller wherein the regression model is further based upon a second set of historical values for a second environmental factor (see col 2 lines 7-12).

Regarding claim 5, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 2. McCabe et al. further discloses the controller wherein the regression model comprises a linear regression (see fig 3).

Regarding claim 6, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 2. McCabe et al. further discloses the controller wherein the regression model comprises a multiple regression (see fig 4 and 5).

Regarding claim 7, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses the controller wherein the environmental factor is temperature (see abstract line 2-3).

Regarding claim 9. Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses the controller wherein the environmental factor is wind speed (see col 2 line 7).

Regarding claim 10. Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses the controller wherein the environmental factor is humidity (see col 2 line 6).

Regarding claim 12, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses the controller wherein the environmental factor is soil moisture (see abstract line 4).

Regarding claim 14, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses an irrigation system comprising an irrigation controller, and a local sensor that provides a signal corresponding to the value for the environmental factor (see col 1 lines 5-10).

Regarding claim15, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1. Morgenstern et al. further discloses an irrigation system comprising an irrigation controller, and a receiver that receives from a distal source a signal corresponding to the value for the environmental factor (see col 4 lines 23-25 and fig 2).

3. Claims 8,11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgenstern et al. U.S Patent No. 5,839,660 in view of McCabe et al. U.S. Patent No. 6,453,216 and further in view of Oliver et al. U.S Patent No. 5,870,302.

Regarding claim 8, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1.

But, Morgenstern et al. in combination with McCabe et al. fail to disclose barometric pressure.

However, Oliver discloses the controller wherein the environmental factor is solar radiation (see col 1 lines 25).

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Morgenstern et al. and McCabe et al. and combining it with the invention disclosed by Oliver.

One of ordinary skill in the art would have been motivated to do this combination in order to obtain a robust irrigation system taking in consideration a larger group of variables.

Regarding claim 11, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1.

But, Morgenstern et al. in combination with McCabe et al. fail to disclose barometric pressure.

However, Oliver discloses the controller wherein the environmental factor is barometric pressure (see col 1 lines 26).

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Morgenstern et al. and McCabe et al. and combining it with the invention disclosed by Oliver.

One of ordinary skill in the art would have been motivated to do this combination in order to obtain a robust irrigation system taking in consideration a larger group of variables.

Regarding claim 11, Morgenstern et al. in combination with McCabe et al. discloses all the limitations based on claim 1.

But, Morgenstern et al. in combination with McCabe et al. fail to disclose barometric pressure.

However, Oliver discloses the controller wherein the environmental factor is barometric pressure (see col 1 lines 26).

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Morgenstern et al. and McCabe et al. and combining it with the invention disclosed by Oliver.

One of ordinary skill in the art would have been motivated to do this combination in order to obtain a robust irrigation system taking in consideration a larger group of variables.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to irrigation controller using regression model:

a. U.S. Pat. No. 5,023,787 to Evelyn-Veere, which discloses irrigation control and flow management system.

b. U.S. Pat. No. 5,479,339 to Miller, which discloses irrigation control and management system.

c. U.S. Pat. No. 5,853,122 to Caprio, which discloses relative humidity sensitive irrigation value control. .

d. U.S. Pat. No. 6,484,064 to Oliver, which discloses evapotranspiration remote irrigation control system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is (703) 305-8009. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-6606.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Carlos Ortiz-Rodriguez

Patent Examiner

Art Unit 2125

JNGandhi

Jayprakash N. Gandhi
Primary Examiner
Technology Center ~~2800~~ 2100

cror

May 16, 2003